

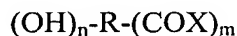
WHAT IS CLAIMED IS:

1. A method for producing an electrode pattern in a conductive polymeric layer comprising the steps of:
 - (a) contacting a charge pattern with an electrographic developer composition comprising a carrier and marking particles having a polarity opposite that of said charge pattern thereby producing a developed image pattern, wherein said marking particles contain a conductivity modifier or a precursor thereof;
 - (b) applying the developed image pattern to a conductive layer containing an electrically conductive polymer and a polyanion on a substrate and
 - (c) transferring said image pattern onto a said conductive layer.
2. The method of claim 1 further comprising a step d) wherein the image pattern is fixed by heating.
3. The method according to claim 1, wherein the carrier is liquid or dry.
4. A method of forming an image pattern using an electrophoretic migration imaging process comprising the steps of:
 - (a) subjecting electrically photosensitive marking particles positioned between at least two electrodes to an applied electric field, wherein said electrically photosensitive marking particles contain a conductivity modifier, wherein the marking particles are suspended in a carrier;
 - (b) exposing said marking particles to an image pattern of radiation to which the particles are photosensitive, thereby obtaining an image pattern on at least one of said electrodes; and
 - (c) contacting the image pattern with a conductive polymeric layer.
5. The method of claim 4 wherein the carrier for the marking particles is a dielectric liquid.

6. The method of claim 1 or 4 wherein the conductivity modifier or its precursor is conductivity degrading or conductivity enhancing.

7. The method of claim 1 or 4 wherein the conductivity modifier is:

(a) represented by the following Formula II:



II

wherein m and n are independently an integer of from 1 to 20, R is an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 14 carbon atoms in the arylene chain, a pyran group, or a furan group, and X is -OH or -NYZ, wherein Y and Z are independently hydrogen or an alkyl group; or

(b) a sugar, sugar derivative, polyalkylene glycol, or glycerol compound; or

(c) selected from the group consisting of N-methylpyrrolidone, pyrrolidone, caprolactam, N-methyl caprolactam, or N-octylpyrrolidone.

8. The method of claim 1 or 4 wherein the conductivity enhancing modifier is N-methylpyrrolidone, pyrrolidone, caprolactam, N-methylcaprolactam, N-octylpyrrolidone, sucrose, glucose, fructose, lactose, sugar alcohol, 2-furan carboxylic acid, 3-furan carboxylic acid, sorbitol, glycol, ethylene glycol, glycerol, diethylene glycol, or triethylene glycol, or a mixture of two or more of these compounds.

9. The method of claim 6 wherein the conductivity enhancing modifier is N-methylpyrrolidone, pyrrolidone, caprolactam, N-methyl caprolactam, or N-octylpyrrolidone.

10. The method of claim 6 wherein the conductivity enhancing modifier is ethylene glycol, diethylene glycol or glycerol.

11. The method of claim 6 wherein the conductivity degrading modifier includes oxidants selected from the group consisting of ClO^- , BrO^- , MnO_4^- , $\text{Cr}_2\text{O}_7^{2-}$, $\text{S}_2\text{O}_8^{2-}$, and H_2O_2 .

12. The method of claim 7 wherein m and n independently of one another denote an integer from 2 to 8.

13. The method of claim 8 wherein the conductivity enhancing compound is sucrose, glucose, fructose, lactose, sorbitol, mannitol, 2-furancarboxylic acid, 3-furancarboxylic acid, ethylene glycol, glycerol, di-or triethylene glycol.

14. The method of claim 1 or 4 wherein the concentration of conductivity modifier in the marking particles is 0.01 to 30 wt. % based on the weight of the marking particles.

15. The method of claim 1 or 4 wherein the concentration of conductivity modifier in the marking particles is 0.5 to 10 wt. % based on the weight of the marking particles.

16. The method of claim 1 or 4 wherein the concentration of conductivity modifying agent in the marking particle is 0.5 to 5 wt. % based on the weight of the marking particle.

17. The method of claim 1 or 4 wherein the marking particles have a particle size of 0.05 micron to 20 microns.

18. The method of claim 1 or 4 wherein the marking particles have a particle size of 0.1 micron to 2.0 microns.

19. The method of claim 1 wherein the electrographic developer contains a conductivity modifier in a concentration of 10^{-6} g/liter to 100 g/liter.

20. The method of claim 4 wherein the suspension of marking particles contains a conductivity modifier in a concentration of 10^{-6} g/liter to 100 g/liter.

21. An element comprising a support on which is disposed an organic electroconductive polymeric layer containing a conductive polymer, such that when the electrographic developer composition of claim 1 or the marking particles of claim 4 contacts said electroconductive layer, the resistivity of the areas that are contacted decreases or increases by at least a factor of 10.

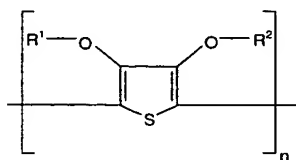
22. The element of claim 21 wherein the layer containing the conductive polymer contains 10 to 1000 mg/m² dry coating weight of the conductive polymer.

23. The element of claim 21 wherein the layer containing the conductive polymer contains 20 to 500 mg/m² dry coating weight of the conductive polymer.

24. The element of claim 21 wherein the conductive polymer is a substituted or unsubstituted pyrrole-containing polymer, a substituted or unsubstituted thiophene-containing polymer, or a substituted or unsubstituted aniline-containing polymer.

25. The element of claim 21 wherein the layer containing the conductive polymer comprises:

a) a mixture containing a polythiophene according to Formula I;



Polythiophene Formula (I)

wherein each of R¹ and R² independently represents hydrogen or a C₁-C₄ alkyl group or together represent an optionally substituted C₁-C₄ alkylene group or a cycloalkylene group, preferably an ethylene group, an optionally alkyl-substituted methylene group, an optionally C₁-C₁₂ alkyl- or phenyl-substituted 1,2-ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group, and n is 5-1000;

b) a polyanion compound; and, optionally

c) a film forming polymeric binder.

26. The element of claim 25 wherein the polyanion is an anion of a polymeric carboxylic acid.

27. The element of claim 25 wherein the polyanion is a polyacrylic acid, a poly(methacrylic acid), a poly(maleic acid), or a polymeric sulfonic acid.

28. The element of claim 25 wherein the polyanion is a polystyrenesulfonic acid or a polyvinylsulfonic acid.

29. The element of claim 25 wherein the film-forming polymeric binder comprises from 5 to 95 wt% of the layer containing the conductive polymer.

30. The element of claim 25 wherein the film-forming polymeric binder is gelatin or gelatin derivatives.

31. A method according to claim 1 or 4, wherein said marking particle also comprises a colorant.

32. A method according to claim 1 or 4, wherein said marking particle also comprises a resin.